



(19) Eur pâl ches Pat ntamt
European Pat nt Office
Office ur p' n des br vets



(11) EP 1 189 351 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
20.03.2002 Bulletin 2002/12

(51) Int Cl.7: H03L 7/10, H03L 7/099

(21) Application number: 01000388.7

(22) Date of filing: 17.08.2001

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE TR
Designated Extension States:
AL LT LV MK RO SI

- BELLAOUAR, Abdellatif
Dallas, TX 75243 (US)
- EMBABI, Sherif
Plano, TX 75025 (US)

(30) Priority: 18.08.2000 US 226348

(74) Representative: Holt, Michael
Texas Instruments Ltd.,
EPD MS/13,
800 Pavilion Drive
Northampton Business Park,
Northampton NN4 7YL (GB)

(71) Applicant: Texas Instruments Incorporated
Dallas, Texas 75251 (US)

(72) Inventors:

- FRIDI, Ahmed R.
Dallas, TX 75081 (US)

(54) Method for tuning a voltage controlled oscillator

(57) A very fast lock integer N PLL with hybrid digital coarse VCO tuning and VCO temperature drift compensation provides for a fully digital tuning scheme without the need for charge pumps. A PLL synthesizer (300) using such a PLL design provides for very fast lock times by using an open loop step and a closed loop step. The

hybrid PLL can achieve coarse tuning within four clock cycles, while minimizing any errors caused by the VCO nonlinearity. Temperature tracking and compensation is also provided. A SAR implementation (100) and an interpolation tuning implementation (200) are also described.

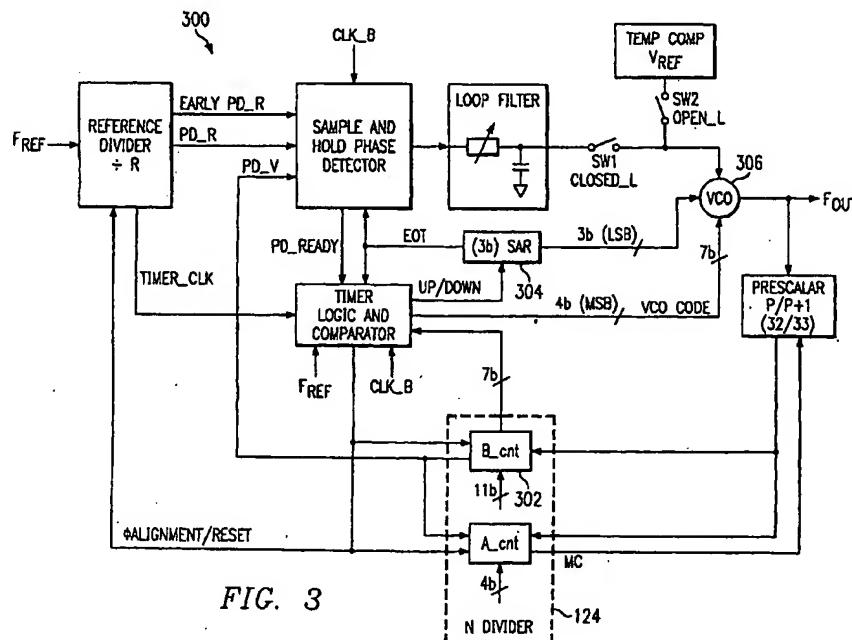


FIG. 3